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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/716,468

11/20/2003

Masato Ishizawa

H-1120

6857

24956

7590

01/23/2008

MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.

1800 DIAGONAL ROAD

SUITE 370

ALEXANDRIA, VA 22314

EXAMINER

NAGPAUL, JYOTI

ART UNIT

PAPER NUMBER

1797

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/716,468

Applicant(s)

ISHIZAWA ET AL.

Examiner

Jyoti Nagpaul

Art Unit

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 and 5-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

Amendment filed on October 30, 2007 has been acknowledged. Claims 1-3 and 5-21 are pending.

#### *Response to Amendment*

Rejection of Claims 3 and 4 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention has been withdrawn in light of applicants' amendments.

Rejection of Claims 1-2 and 4 as being anticipated by Koeda (US 5319954) has been modified in light of applicants' amendments.

Rejection of Claims 3 and 5-7 as being unpatentable over Koeda (US 5319954) has been modified in light of applicants' amendments.

#### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 1-3 and 5-21** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants' recite in Claim 1 "a liquid surface estimation mechanism for estimating the current liquid surface height derived from an approximate formula curve based on liquid surface height changes that occur during a period of the first several tens of tests for analysis; and a controller for controlling a dispensing operation of said pipette probe in accordance with the result of liquid surface estimation by

said liquid surface estimation mechanism." It is unclear from the claim language as to what applicants' regard his or her invention. From applicants' disclosure, pgs 10-12, it appears that there are no changes in the liquid surface height as there is no significant bubble formation during a period of the first several tens of tests for analysis. Furthermore, the difference between surface heights changes occur due to bubble formation as the number of test conducted increases as shown in Figure 3. Additionally, it appears that a liquid surface estimation mechanism for estimating the expected liquid surface height is calculated from an approximate formula curve which is derived from a reagent liquid surface height prevalent upon bubbling and a true liquid surface height. It is suggested that applicants' claim clearly as to what the applicants' regard to his or her invention. Examiner suggests applicants' recite, --a liquid surface estimation mechanism for estimating a expected liquid surface height that is calculated from an approximate formula curve that is a function of reagent liquid surface height values of a reagent liquid surface height prevalent upon bubbling and a true liquid surface height for a number of conducted tests upon analysis; and a controller for controlling a dispensing operation of said pipette probe with the calculated expected liquid surface height by the liquid surface estimation mechanism.—

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. **Claims 1-3, 7-8 and 13-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Koeda.

With respect to Claims 1, 3 and 8, Koeda teaches an apparatus for analyzing liquids. The automatic analyzer comprises a reagent vessel (16) for

containing a reagent and a pipette probe (10) that has liquid surface detection function (19) and dispenses a reagent from the reagent vessel (16). The system further comprises a reaction vessel/reaction container for containing a reagent that is dispensed from the pipette probe (10). The system further teaches an analysis mechanism/automatic analyzer for measuring a reaction between a reagent and a sample with the reaction vessel. The analyzer further comprises a storage means/memory for memorizing liquid surface position information that is acquired by the liquid surface detection function (19). (See Col.4, Lines 26-33)

The system further comprises a liquid surface estimation mechanism for estimating the current liquid surface position height derived from a previous measurement. Koeda teaches if the liquid surface detecting position is too low as with the liquid surface detecting position of the previous time, it is judged to be a bubble. Therefore, Koeda does teach a liquid surface estimation mechanism. (See Col. 4, Lines 49-61) Koeda further teaches a function for controlling a dispensing operation of the pipette probe (10) in accordance with the result of the liquid surface estimation by the liquid surface estimation mechanism. (See Col. 4, Lines 26-68)

Koeda fails to teach the current liquid surface height is derived from an approximate formula curve based on liquid surface height changes that occur during a period of the first several tens of tests for analysis. However, Koeda does teach a liquid surface detector for detecting the position of the surface of

the liquid between measurements and comparing the differences of the measured liquid surface heights.

The method of least squares for determining an approximate formula curve is very well known in the art. This equation can be applied to any set of data points. Therefore, the system of Koeda is automated and is clearly capable of calculating the reagent surface position by the method of least squares and deriving an approximate formula from a number of liquid surface heights for the first several tens of tests for analysis for obtaining a correct amount of reagent. It would have been obvious to one of the ordinary skill in the art to provide the system of Koeda with a liquid surface estimation mechanism that determines a current liquid surface height from an approximate formula curve by the method of least squares based on liquid surface height changes that occur during a period of the first several tens of tests for analysis to achieve the predictable results of obtaining a correct amount of reagent.

With respect to Claim 2, the system further comprises an agitation mechanism for stirring a reagent with the reagent vessel. (See Col. 1, Lines 20-30)

With respect to Claims 7 and 13-21, Koeda does teach a mechanism for cleaning a pipette probe. It would have been obvious to one of the ordinary skill in the art to modify the system of Koeda to include a mechanism for cleaning a pipette probe more extensively during dispensing than in a normal dispensing operation if a difference greater than predefined exists between the liquid surface

height estimated by the liquid surface estimation mechanism and the liquid surface height measured by the liquid surface detection function in order thoroughly clean the pipette and therefore increase accuracy when obtaining the correct amount of reagent.

***Allowable Subject Matter***

7. **Claims 5-6 and 9-12** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Prior art fails to teach or fairly suggest a mechanism for automatically adjusting the liquid surface estimation result estimated by the liquid surface mechanism based on an amount of a carryover that remains on the outer circumferential surface of the pipette probe and a mechanism for automatically adjusting the liquid surface estimation mechanism based on an amount of reagent evaporation from a reagent vessel.

***Response to Arguments***

8. Applicant's arguments with respect to claims 1-3 and 5-21 have been considered but are moot in view of the new ground(s) of rejection. Refer above.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).




A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jyoti Nagpaul whose telephone number is 571-272-1273. The examiner can normally be reached on Monday thru Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JN

  
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